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## ETHICAL AND ECONOMIC ELEMENTS IN PUBLIC SERVICE VALUATION

### SUMMARY

A distinction between ethical value and economic value, 27. — Four theories of valuation for purposes of public regulation, 30. — I. Original Cost Theory. Its practicability, 31. — The problem how to deal with appreciation of land, 32. — II. Continuous Property, or "Antigo," Theory, 34. — Ethical and practical difficulties, 36. — III. Theory of Cost of Reproduction New, 37. — Cases illustrating its possible injustice, 38. — Practical difficulties, 39. — IV. Theory of Cost of Duplicating the Service, 41. — Cases illustrating its difficulties, 42. — No one of these theories fully satisfactory, 43. — Original Cost nearest approaches justice, 47. —; but is to be interpreted in terms of Efficient Sacrifice, 48.

IN the valuation of public service properties there is as yet great confusion as to what is meant by the word value, or rather as to which of the many definitions of that very indefinite word shall be applied to the varying circumstances and purposes of valuation work.

In the pioneer cases involving valuation the courts have, as a rule, wisely refrained from being too definite in attaching exact meanings to the word value. But as the work proceeds and grows in importance it becomes desirable that we have a clearer conception of what interpretations of value should be used in arriving at just conclusions when assigning so-called value to the properties subject to public regulation.

The value of a public service property in the strict economic sense means a price which the property would bring under a given set of circumstances. It does not establish that price or value which the same

property *should* bring, in order to meet all the requirements of justice for both the sellers and buyers. In other words, there is a clear distinction between an economic value and what may be called an ethical value.

Still more distinct does ethical value appear from economic value when we consider the valuation of a property for the purpose of fixing a return or the making of rates. In this case there is no intention of exchange of property. The question is primarily one of ethics or justice between the owners of a public utility and the consumers of its product. And in the problem of public service valuation it is neither possible nor desirable to neglect the element of justice which should enter into the determination of the values involved. The exercise of the power to fix rates or the exercise of any other power in the public regulation of the utilities is a governmental function, and being so, the very first element to be considered is the element of justice.

The conclusions arrived at in valuation cases, while generally not unjust, have been, as a rule, the result of haphazard and conglomerate methods of reasoning. They rest upon no well understood or well established principle or theory, so defining the value to be arrived at and so determining the elements entering into it as to furnish even an approximately correct guide to results satisfying the sense of justice of men responsible as Judges or Commissioners for the right solution of the problems presented to them.

The danger in the situation lies in the possibility of the rigid adoption by the courts or commissions of one of the several theories or rather methods of arriving at value which are now being presented to them. So long as none of these theories predominate,

and the courts and commissions continue to use the indefinite make-shift of rendering opinions by stating that "we must consider" this element and that element; and so long as they continue to make exceptions in the application of any one of these theories to all points of the problem involved,—so long they are in fact guided by a rough sense of justice and fitness, and the results may, as a rule, be tolerably satisfactory. But unless some guiding over-theory of ethical value is developed, it is to be feared that as time goes on one of the present existing theories of value will, by gathering gradually the strength of precedent, finally fix itself as the authority by which the value of public service properties shall be estimated. Already we can see evidence of one of the theories (Cost of Reproduction New) beginning to gain acceptance more rapidly than the others, and becoming intrenched as a precedent. Unfortunately, under close analysis this theory appears to be little suited to producing permanently satisfactory results.

In the following discussion and criticism of several theories of valuation the writer will use the names of the theories only with the meanings defined herein, and in the whole discussion he has primarily in mind valuation for rate making, or kindred purposes, as applicable to what may be called the Municipal Utilities,—Electric Light and Power, Gas, Water, Street Railways, Telephones, and the like.

The methods in use for arriving at present value of the property of public service companies may be classified under three distinct theories, perhaps four, no one of which can be applied in its purity without showing points of injustice either to the companies or to the consumers. These theories are as follows:

First: The theory of Original Cost, which, briefly stated, is that the value upon which returns may be allowed shall be the actual cost of the property remaining in the service of the public (with or without a deduction for depreciation).<sup>1</sup>

Second: The Continuous Property theory, sometimes called the "Antigo" theory, which is really a sub-theory of Original Cost, and will be more precisely defined in a later part of this paper.

Third: The theory of the Cost of Reproduction New, which means that the company should be allowed to earn on a value (with or without a deduction for depreciation) represented by the estimated cost of reproducing, at the time of the valuation, the identical property then in the service of the public. That is, present prices to reproduce are to be applied to measure each item of value as it appears in either intangible or tangible property.

Fourth: The theory of Cost of Reduplicating the Service, which means that the value to be earned on should be the present cost of installing a plant capable of performing the same service as the one under consideration, but not necessarily an identical plant.

In the present article it will be possible only to examine some of the salient points of each theory.

## I

The first theory (Original Cost) does not contemplate, as many seem to think, the taking as a basis for valuation all the money which at any time or for any purpose has gone into the enterprise. It merely

<sup>1</sup> Whether or not a property should be depreciated to determine the amount to be earned on in rate cases is a question. The problem of depreciation cannot be treated in this paper. The writer's views on the subject are given in a pamphlet recently published as a report to the St. Louis Public Service Commission, and entitled "Should Public Service Properties be Depreciated to Obtain Fair Value in Rate Cases?"

assumes that the basis of value shall be the actual cost of the items of equipment used and useful in the service at the time of the valuation. It also assumes that there shall be allowed, as so-called intangible items of value, such expenses incurred in organizing and establishing the business as can be shown to have been necessary, reasonable, or for the ultimate benefit of the public. And it may assume a deduction from cost to offset the depreciation which has taken place in the physical property.

The theory is an ethical one in the sense that it attempts to measure the *efficient sacrifice* which the investors have made in the service of the public. It is practical on its administrative side, in that it takes as a measure of value an actual exchange which has taken place, and uses the prices which prevailed in making that exchange. It is, in fact, an effort to reproduce the results which would show in property account today on a set of books which had been perfectly kept throughout the existence of the enterprise.

The theory of Original Cost also presents a number of advantages from the standpoint of safety to the investor. In the first place it offers stability; the investors who have placed say a million dollars in a public utility enterprise have some assurance (depreciation excepted) that they are to be allowed to continue to earn on a million dollars, provided the investment is made with good faith and reasonable judgment, and the property kept up. All risk of loss in value from fluctuations in the price of labor and material is removed. It is true that all chance of gain from the same fluctuations is also removed. But generally speaking capital, especially large capital, would much prefer safety to chance of gain at the expense of safety. If this is granted, it follows that the consumer also

would benefit by the low return at which capital could be secured.

It is sometimes urged against the theory of Original Cost that it is often impossible in practice to obtain unit costs for the time of construction of the property under consideration. This may occasionally be true, but it is seldom that records cannot be found of prevailing prices which extend over the life of most public service plants now in existence. Labor items are, of course, sometimes difficult to establish after a lapse of years, but reliable data on even this element can generally be obtained by the investigator who will take the trouble to go in detail to the bottom of the work he has in hand. It is certainly no more difficult than to estimate the present cost new of such equipment as is no longer on the market, and in itemized inventory and valuation work one of these two costs must be taken unless averages over several years are used, in which case the difficulties multiply.

The disadvantage of applying this theory of Original Cost in its purity appears at once, however, when we come to consider the item of real estate or private right-of-way. The very rapid and constant general advance in the value of real estate in this country has rendered the unearned increment a material item in the value of nearly any large public service enterprise which has been in existence even a comparatively short time. And to say that in public service properties real estate should be valued only at its original cost, while all other owners are allowed the increased value, might appear an unjust discrimination. The strict logic of the situation might, indeed, be supposed to decide that a public service company should neither suffer nor benefit by real estate fluctuations, any more than by the fluctuations in the price of labor and

material in any other part of its plant. Nevertheless, there appear to be elements of essential difference between real estate and the other forms of property which enter into public utilities.

Real estate, in American cities at least, is almost certain to rise in value as the years go by, and it can be assumed that this prospective rise was taken into consideration at the time of the original investment in the utility, and was a part of the inducement to make such investment; and therefore should be regarded as a legitimate profit at least up to such time as the first public valuation is made. This argument of inducement from pre-determined or expected rise in price as applied to real estate cannot, however, be used in regard to the investment in the equipment or buildings of a utility, for when investment is made in such property where the fluctuations in price are uncertain and generally small or compensating, the investor cannot have as a legitimate inducement anything but the hope of making a good return upon his actual investment, and the more his investment is relieved from the risks of fluctuation in price, the lower will be the rate of profit at which he will be willing to have his capital serve the public.

The writer is aware that this reasoning in regard to real estate is not by any means unassailable, and that there are many who hold that what is called the unearned increment should not be capitalized and brought into the rates paid by the public, but that the company should be allowed to realize on the increased value of real estate only when it sells it. Be this as it may, universal custom has sanctioned the allowance of the increase in value of real estate and so far there is no decision of the courts or commissions which does not recognize it. It would seem impossible in

the ordinary meaning of the word "just" to determine a just reward for a public service (and the building of a utility is a public service) unless all the conditions under which the act of service is performed are taken into account. Whether or not an assurance of a future advance in the value of real estate which existed at the time the investment was made can be called one of the conditions surrounding the creation of a property is a question which may well bring different answers from different reasoners.

## II

The second theory of valuation, as I have listed them, known as the "Continuous Property" or "Antigo" <sup>1</sup> theory, is really a sub-theory of the theory of Original Cost. It attempts to measure accurately the ultimate cost to the investor of building a plant and establishing a business. It is essentially an accountant's rather than an engineer's method of valuation, and presupposes an accuracy and clearness of records which unfortunately are seldom to be met with in properties whose history extends back even a few years.

The theory is that from its beginning a company is entitled to earn and distribute in interest or dividends, a certain percentage upon its investment over and above all charges, including a proper amount for depreciation. If in any year it earns and distributes more than this allowed percentage, then the amount of this surplus is to be deducted from the value of the property. If in any year it earns and distributes less than this allowed percentage, then the deficit is to be capitalized.

<sup>1</sup> From its recognition in *Hill v. Antigo Water Co.*, 3 Wis. R. R. Com. Reports, 623.

While calculations based upon this theory may be valuable for obtaining certain data for measuring the cost of establishing a new business, yet, even assuming the correctness of the basic figures, the theory cannot justly be applied without very important modifications and limitations. The period during which a deficit may be allowed to be capitalized as cost of establishing a business must be limited to a reasonable time at the beginning of a new business. It must also be assumed that there was a reasonable demand for the utility when built, and that the property was well managed during the period of deficit.

It is evident that if such limitations to the theory are not considered, a utility might be established long before there could possibly be a demand to justify the investment, or might be built where ruinous competition was sure to take place, and that the results of such bad judgment, and of possibly long periods of bad management not easily detected might ultimately be placed as a perpetual burden upon the consumers. In short, the application of the Continuous Property theory in its purity and without limitation would amount to a guarantee of the investment by the public. In this case, all risk to the investors being in the end eliminated, the return allowable should logically be reduced to a figure somewhat approaching the ordinary return on municipal securities; too radical a step to be considered, for the present at least.

The reverse application of the theory (*i. e.* supposing the utility to have made a surplus over reasonable return) might, if applied to a company which has been very successful in the past, result in a complete confiscation of the property. This of course is merely a theoretical point, as the courts would not allow a

reduction of value on account of former profits. To go back from the period of a valuation and assume the right to deduct from capital the surplus earnings over an amount only now determined as a reasonable return is clearly an *ex post facto* proceeding, and should not be supported in any court if so presented. As the public would thus be prevented from reclaiming excess profits, the theory could be put into effect only in properties where there has been an ultimate loss or deficit below reasonable return.

The theory is founded upon ethical elements, in that it attempts to see that the investor has a reasonable return, and only a reasonable return, upon his investment from the beginning, and it might be sound theoretically, provided the enterprise has been entered into in response to a distinct and officially expressed demand on the part of the community for the building of the utility. In other words, if the community had demanded it, the community might justly be called upon to bear any losses incurred. The speculative character of a great number of public utility enterprises, especially when they were at their inception competitive, often precludes the assumption that there was even a sound economic demand for their establishment. One of the principal causes of over-capitalization of municipal utilities has been the great economic waste produced by competition, and it is sometimes claimed that the community, having permitted the waste through granting competitive franchises, should be made to assume the burden of loss resulting therefrom. Yet this can hardly be admitted as an ethical principle in valuation, for while it is true that the community permitted or sanctioned the competition, it cannot be established that there was any contemplation, either on the part of the investors or the public, of any

guarantee against loss. If indeed a utility enterprise were begun under strict regulation, it is conceivable that the Continuous Property theory might be applied, and might result in the community's receiving low rates in return for a practical guarantee of returns. But as yet the community is not prepared by the state of public opinion to make such a guarantee; and even if it were, the wisdom of such a step might be seriously questioned.

While the Continuous Property theory is founded upon ethical principles, the practical difficulties of applying it to properties already in existence and whose histories are at all complicated or whose accounts are obscure become so great as to make it very dangerous should it become established and used blindly as precedent.

### III

The third theory, that of Cost of Reproduction New, is most often heard of in public service valuation. Yet when closely examined it appears the most illogical of the four. The values arrived at (before depreciating) do not represent theoretically what was paid for the different items of the property, nor when added up do they represent what anyone would give for the plant as a plant. It has been argued that Cost of Reproduction New represents in theory what a community would have to pay for a plant under condemnation proceedings. But this is not true, for the limit of the value of a plant to a purchaser, and the limit of its selling value to the owner is (leaving the established business and earning power out of consideration) what he can duplicate the service for, not what he can duplicate the identical plant for. It is seldom that a

plant would be duplicated if it were to be replaced by another one, and this is especially true of large plants which are the result of the growth of years in business.

A case in which the exact application of the theory of Cost of Reproduction New would produce a clear violation of the principles of justice is where a company in its underground construction has placed its pipes or conduits in the streets at a time when these streets were unpaved or paved very cheaply. In replacing the streets to their original condition the company would make but a small investment. Now suppose that the city, after the work of the company is done, decides to put down a costly pavement. The community pays the cost, but under a strict construction of the theory of Cost of Reproduction New, the company would claim the right to earn on the value of the expensive pavement, with the result that the community not only would make the investment in paving but would actually pay the company a return on it, in the form of rates calculated upon the value determined under this theory.

On the other hand, a considerable item of value as presented in most valuation cases is that of Cost of Establishing the Business, which is, in fact, an attempt to calculate the expense incurred in creating a demand for the product, or the deficit in just returns on the investment while awaiting the development of the business. Under the theory of Original Cost such an item might justly amount to a considerable sum. But it is evident that in many cases a duplication of the business under present conditions (as the theory of Cost of Reproduction New contemplates) would very materially reduce the amount allowable for creating demand or establishing business. Here the

theory of Cost of Reproduction New might work considerable injustice against the company.

Injustice might also result in the case of a street railway having been compelled by ordinance or circumstance to grade a street. It is plain that to lay the track today would not require such grading, and the investors would not be allowed return on money actually spent.

These are only three instances, taken from many which might arise in actual valuation work. They serve to illustrate clearly that the theory of Cost of Reproduction New neglects some of the ethical elements necessary to the adjudication of values by public officials. In fact, how can a theory of value be a just one when it is avowedly based entirely upon present conditions, and when it leaves out of account all the varied circumstances under which a set of investors may have placed their money in a public service ?

It has become somewhat customary for engineers, when nominally applying the theory of Cost of Reproduction New, in practice to make use of the prices of labor and material not of the time when the valuation is made, but to average these prices for five or ten years back. This is, of course, an abandonment of the theory. If averages are taken for a period of five or ten years back, why not take the average price for the whole period during which the material existing has been installed ? The use of average prices over the whole period would give rise to a new theory which might be called the theory of Average Price. It has never been advanced, so far as the writer knows, in a valuation case under its proper name, altho approaches to it are, as stated, often used under the name of Cost of Reproduction New. Such an averaging of prices, as practised under the name of the theory of Cost of

Reproduction New, does not contemplate the reckoning of prices only when the company has made purchases, but includes rise or decline of price of material owned by it whether purchases were made or not. In principle at least, it thus places the resulting averages under the influence of market fluctuations, as in such staples as copper or steel, which may have been entirely speculative and very remote from the business of the utility under consideration. If the averages were obtained by taking prices only when the company had made purchases, and if the quantities purchased had been considered, it is evident that the result would be Original Cost, *i. e.* the actual investment in the present plant, provided disappearance of property were properly charged off to depreciation.

The theory of Cost of Reproduction New has been presented to courts and commissions so frequently without there ever having been any effective analysis of its soundness, that it seems in a fair way to be generally adopted. If it should finally become, by force of precedent, a general rule in the valuation of public utilities, it is to be feared that the future investor may find that he has been led into a position where he can have no clear idea of the length of time during which he is to be allowed to earn on his actual investment. In case of a long period of low or declining prices, investments in such plants as gas and water works, where the property has a long wearing life, may take on an element of increased risk which will be disadvantageous both to the investor and to the consumer. The theory is staunchly defended in name by many who have had the opportunity to do actual work in public service valuation, especially among the representatives of the companies. But nearly every one of its defenders who knows anything about

the real work will make so many sensible exceptions to the application of the pure theory, that it will become evident that what he is defending is not the Cost of Reproduction New theory at all. His method of working may be good and rational; he has simply applied the wrong name to it. But it must be borne in mind that the courts generally have not the opportunity to understand the full scope of the problem and the theories underlying it, and that mere words used in court decisions are powerful forces for the future. Those engineers and commissions who are using the term Cost of Reproduction New to define their work (which may be good) are risking the final establishment of a governing theory which they do not really intend to put forward. Taken for what its name means and in the sense in which court decisions may come to make it mandatory, the theory is lacking in ethical elements. It cannot be said to be good in logic or in economics.

#### IV

The fourth theory of valuation, Cost of Duplicating the Service, is that which should be and naturally would be used by an engineer in advising a client contemplating the purchase of a given plant. It seems obvious that a plant, leaving the established business out of account, cannot be worth more to a purchaser than the sum for which he could erect an entirely modern plant of equal durability, efficiency, and capacity. Yet this theory is not used or given much weight either by the commissions or the courts in cases involving the valuation of public utilities. Its application, especially to rate making, would be harsh and drastic and would leave out of account some of the essential elements of

justice toward the man who has placed his money in the public service.

Suppose, for example, that a company has been compelled by law to place its wires under ground at a time when prices for such work were at a very high point or at a very low point. Does it not appeal to the simple idea of justice that if the company is compelled to pay the high price it should be allowed to earn a return on its investment made under compulsion and without an opportunity for its officers to use their judgment; and is it not equally just that if this compulsory investment is made at a time of low prices, the community should reap the benefit of an advantage due principally to good fortune and not to any extraordinary wisdom on the part of the company? The same line of reasoning will apply to other instances of construction when, as is often the case, an investment is compelled by circumstances and delay is next to impossible.

These arguments may also be used as against the theory of Cost of Reproduction New. In both cases the impossibility of attaining justice is due to the fact that neither of the theories, if adhered to, take into consideration the past history of the enterprise involved. An ethical value cannot be arrived at without considering the past. Taking present value in a strictly economic sense, neither the Original Cost of the plant nor the present Cost of Reproduction New would seem to be as logical as the theory of Cost to Reduplicate the Service. In public valuation work, even if the theory of Cost to Reduplicate the Service were just, it would be impracticable on account of the impossibility of attaining agreement between engineers as to the specifications and cost of the hypothetical plant.

This review of the various theories of valuation shows that none of them can be applied in its purity without considerable violation of ethical principles or without encountering insurmountable practical difficulties. A study of all four of them shows, however, that Original Cost, as herein defined and perhaps modified in respect to real estate, presents many advantages over the others, both as to ethical results and as to ease of application. It has in addition the very great practical advantage of being the only theory which lends itself readily to the necessary plan of keeping valuations of public service properties always up to date by proper accounting. It should be the aim of every Public Service Commission to have finally on its records, for the instant use of the law making or taxing arms of the government, a valuation brought down to the date of its use. After a complete detailed inventory and appraisal is made, the only practicable method of keeping the valuation up to date is by adding the cost of each new purchase of property and deducting the cost of those items which are discarded, together with proper treatment of the depreciation account. In other words, Original Cost must be used in making the necessary charges to the property account. It is evident that if any other theory than Original Cost is used in making the original appraisal by inventory, we will have in the end a valuation which is an irrational conglomerate of theories without ethical reasons for such conglomeration. The only other alternative would be a complete new appraisal every time the value of a plant is to be ascertained.

The trouble with the theory of Original Cost is that it does not satisfy the idea of attaining present economic value. On the other hand, the theory of Cost of Reproduction New, while superficially or rather in mere

name it satisfies the idea of present economic value, does not in reality come any closer to present values than Original Cost. As applied in its strictest sense it would result, as stated before, in the mere summing up of the present cost of the various items and might be far from the value of the plant as a whole. As applied by taking five or ten years' average prices it may even be as far from using present prices on the separate items as would be the theory of Original Cost.

The statement that the "trouble" with Original Cost is that it does not satisfy the "idea" of present value, means only that there exists a generally adopted but essentially superficial idea that we *should* try to get present economic value in a governmental valuation for rate making. Yet this assumption that the aim in rate cases is to attain present economic value is entirely superficial and erroneous, as becomes apparent at the first steps in the analysis of the work of any competent commission or court. The recognition of any circumstances of especial difficulty or especial advantage in the history of the creation of any particular property shows clearly that the real result of good work is to establish a Just Amount upon which the companies should be allowed to make returns, and not to establish a present economic value which would ignore the sacrifices of the creators of the enterprise so far as those sacrifices have been made in good faith and with benefit for the public. After all, the future is the *field of effect* of most valuation work, and even if a correct present value should be determined, can it be said, that this value would be more just in the future, or is more just now, than a value made up on an original cost to the investor of the plant and organization which is kept in the service of the public?

Unfortunately the United States Supreme Court, in the conspicuous case of *Wilcox v. the Consolidated Gas Company*, has said <sup>1</sup>

And we concur with the court below in holding that the value of the property is to be determined as of the time when the inquiry is made regarding the rates. If the property which legally enters into the consideration of the question of rates has increased in value since it was acquired, the company is entitled to the benefit of such increase. This is, at any rate, the general rule.

If we admit the rule here laid down and apply it to advances in prices of material, labor, and other elements in which the expectation of such advances is not part of the inducement to the investment (as is the case with real estate), we must also admit fluctuations in prices which cause a decrease in value. If this is done, an unnecessary and undesirable element of speculation is introduced into public service properties on account of the very fact of governmental valuation, and the risks so created will in the end be reflected back upon the consumer in the shape of the higher rates of returns which can justly be demanded by the investor on account of such risks.

At present we are going through a period of re-adjustment of values on account of the presence or imminence of public valuation, and this period necessarily brings much uncertainty as to investments in public service properties. Yet the true aim of regulation is to bring about eventually a condition where, so far as is possible, all risk and all speculation will be removed from the enterprise, and there will be a clear, lasting, and dependable understanding between the consuming public and the investing public. Such a desirable condition can be attained only by making it understood that investors are to be allowed returns upon what they properly invest and keep invested in the service of

<sup>1</sup> 212 U. S. 19.

the public, and not by making their property the subject of future fluctuation in prices of labor and materials over which they can exert no control.

It is evident if this opinion of the Supreme Court is strictly adhered to, it could be claimed that there must be an entire revision of all prices entering into a valuation each time a rate is changed, and the opportunity is offered for any pedantic judge in a lower court to throw out any rate work even of the ablest commission, on the ground that present prices have not been used throughout. To use present prices throughout is impossible where, as is often the case, work of the character under consideration is no longer done. In fact, it is practically impossible, in making up a detailed appraisal of any large property, to adhere strictly throughout either to present cost prices or to original cost prices. Yet this condition applies as a rule only to matters of minor importance, while the adoption of a correct theory to be followed as closely as possible will often be of great importance in admitting or rejecting items of large value, especially where the so-called intangible assets are concerned.

When it is understood that to attain a true present economic value of a property is next to an impossibility, then it is at least to be hoped that, for the sake of stability in values, elimination of risks, and the establishment of clear understanding as to the future treatment of properties under governmental valuation, all parties, including the companies themselves, may accept some controlling theory which will subordinate the idea of economic value to the higher principle of ethical value and to the very valuable "commodity" of knowing what to expect.

It is obvious that ethical value and economic value are not necessarily the same thing. But there is a

distinct and to a certain extent a logical point of view from which it is assumed that the economic value of a public utility property is its value once for all, and that in the making of a valuation the owners of these properties should not be placed upon any other plane than the owners of any other properties. It would follow from this that the present value of a public service property can only be the price at which that property would sell for today. But immediately the principle of public regulation of rates is recognized, it is evident that this regulation will affect and even control the economic value of the property; and if an ethical element based upon the sacrifices of the investor is not introduced, the public could, theoretically at least, make the rate anything it wished, and the value of the property would then be anything it wished, without regard to results which would be grossly and patently unjust.

The analysis submitted in this paper indicates that the theory of Original Cost gives the nearest approach to just results. And it appears in fact that in considering questions of justice we are generally forced back to what actually did happen in the production of any property; this means Original Cost. Yet this, too, cannot in many cases be applied rigidly; and should it become obligatory by court decisions, might prove only less hampering and harmful than the other theories.

The need is for some guiding over-theory which will guard against ethical errors and show where the different economic elements can safely be used or rejected. The courts and the commissions seem at present to be giving due weight to the ethical elements involved in the valuation cases presented, and it is possible that the better equipped commissions, if left to them-

selves, would continue to do so. From the nature of its work a good commission is a specialist in valuation, and should know all sides of its business. A court, from the varied character of the work required of it, is at best but an amateur in a specialized field and there is danger at any time that a judge in some high court, in a well intended effort to be somewhat specific in his definition of value, may fix upon us limitations which will materially hamper efforts to attain results just both to the companies and the public.

In searching for a guiding ethical over-theory of value for use in making valuations of existing properties, there presents itself for consideration an adaptation of the socialistic theory of value, — value measured by the sacrifice of the producers. The pure socialistic theory goes back to the sacrifice in the way of discomfort and physical effort made by the workman, and is, of course, entirely subversive of economic values as at present established. But it seems quite possible that an adaptation of the theory, which would only go back to the money sacrifice of the investor, might be found a workable theory for our problems of valuation and rate making. It would, however, be necessary to limit the theory to a consideration only of the *efficient* sacrifice made in the service of the public. Without the limiting word "efficient" the theory would run wild and admit of all kinds of abuse.

It may be objected that results based upon Efficient Sacrifice may not be a "value." The term value is an unfortunate one when used in naming the ultimate object of Public Service Valuation work; only if qualified as Ethical Value does it express with any accuracy the result which should be desired. It would be much better if the object of so-called valua-

tion were described as the "Just Amount" to be earned on, or the "Just Capital." But it is probable that the idea of value is too intimately connected with the work for the use of the term ever to be eliminated.

The statement that the returns to be earned by the public utility companies should be so adjusted as to give a just reward for Efficient Sacrifice in the service of the public, is probably nothing more than the crystallization into a phrase of what has been the aim of the courts and commissions which have had the elements of justice in their minds when dealing with questions of valuation and rate making. Nevertheless, the statement in succinct form, if adopted as the definition of an over-theory, might serve to make questions of strictly economic value subordinate to the ethical questions of justice, and might possibly prevent many errors which are sure to occur in case any strictly economic theory becomes controlling.

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